

We Claim:

1. An arrangement for charging a power module, comprising:
  - a power module including one or more ultracapacitors;
  - an energy source connected to said power module, a positive terminal of said energy source connected to a positive terminal of said power module, and a negative terminal of said energy source connected to a negative terminal of said power module; and
  - a control circuit adapted to provide a higher current level to said power module than output by said energy source for at least a portion of a charging period.
2. The arrangement according to Claim 1, wherein said control circuit is adapted to maintain a constant power level at the power module as the voltage level across the power module increases.
3. The arrangement according to Claim 1, wherein said control circuit includes pulse-width modulator and an inductor connected in series with said power module.
4. The arrangement according to Claim 3, wherein said pulse-width modulator controls a charge level of said inductor.
5. The arrangement according to Claim 4, wherein said charge level corresponds to a current level which is in accordance with a desired power level at said power module and an instantaneous voltage level across said power module.
6. The arrangement according to Claim 3, wherein said inductor is adapted to limit a current level through said power module to a predetermined peak level.
7. The arrangement according to Claim 1, wherein said control circuit is adapted to provide a current level through said power module greater than a current level from said energy source during at least a portion of a charging period.

8. A constant-power charging circuit for an ultracapacitor power module, comprising:  
a pulse-width modulator; and  
an inductor connected in series with said pulse-width modulator and said power module;  
wherein said pulse-width modulator is adapted to control the charge level of said inductor.
9. The circuit according to Claim 8, wherein said charge level corresponds to a current level which is in accordance with a desired power level at said power module and an instantaneous voltage level across said power module.
10. The arrangement according to Claim 8, wherein said inductor is adapted to limit a current level through said power module to a predetermined peak level.
11. The arrangement according to Claim 8, wherein said control circuit is adapted to provide a current level through said power module greater than a current level from said energy source during at least a portion of a charging period.
12. A method of charging an ultracapacitor power module, comprising:  
charging an inductor connected in series between an energy source and said power module; and  
controlling a charge level of said inductor to achieve a desired current level through said power module.
13. The method according to Claim 12, wherein said controlling includes modulating the current from said energy source to said inductor through a pulse-width modulator.
14. The method according to Claim 12, wherein said desired current level corresponds to a desired power level at said power module.

15. The method according to Claim 14, wherein said power level is constant during charging of said power module.
16. The method according to Claim 12, wherein said desired current level through said power module is greater than a current level from said energy source during at least a portion of a charging period.